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THE DEPARTMENTAL COMMITTEE OF THE BOARD OF AGRICULTURE ON SWINE FEVER—FINAL REPORT.

The final report of this important Committee is now before us, and is distinctly interesting. Its conclusions cannot be called encouraging, but they are far from being hopeless; and they clearly foreshadow important changes in the Board's policy against swine fever.

The Committee's actual report is not voluminous—it fills less than three pages. Following it are minutes of the evidence given by two of the Board's general inspectors, Messrs. W. S. Douglas and A. Hamilton Pryce, who have been in charge respectively of the Scotch and Welsh "special procedure areas." Then comes a very long and detailed report of experiments, amounting to 54 pages, from Sir Stewart Stockman, who was commissioned by the Committee to investigate a number of questions. One of these—the possibility of utilising the diagnostic tests employed in connection with other diseases for the discovery of non-typical cases of swine fever—is not yet reported upon. The others, which may be summarised as concerning the methods of infection, the duration of infectivity, the possibility of "carriers" in connection with swine fever, the duration of immunity after an attack of the disease, and the utility of artificial methods of immunisation, are all dealt with by Sir Stewart; and his results form the chief basis of the Committee's report. This, with some tables showing the incidence of the disease, completes the volume.

The "special procedure" of vigorous slaughtering out of in-contacts, which has been adopted in certain areas for 3½ years, has not been a success. Enforced in areas where swine fever had previously been brought to a low ebb, it seems to have kept down the number of outbreaks at a time when disease was increasing greatly in other parts of Great Britain. But its good effects were largely nullified by the re-importation of disease from other counties; and the Committee conclude that it would not be likely to eradicate the disease in the "special procedure areas" unless all pigs from other areas could be excluded. The "special procedure," therefore, has been abandoned for the present. We may add that its failure well illustrates the economic difficulties of eradicating swine fever by stamping out methods. The financial loss would be appalling, if success were to be assured.

Sir Stewart Stockman's experiments have enabled the Committee to form definite conclusions upon most of the questions concerning infection and infectivity. They conclude as follows. The manure of pigs suffering from swine fever is infective. A period of fourteen days may be regarded as sufficient to bring about the disinfection of infective manure by natural processes. It should be noted that one important member of the Committee, Prof. Penberthy, only signs the report with the reservation that he is unable to subscribe to this finding. He does not consider that the experiments upon which it is based are conclusive, and thinks it "highly desirable that further experiment on the point should be undertaken and its result well considered before any period is accepted as the basis of administrative measures."

Rats are not, as has been suggested, pathological carriers of swine fever; and all the available evidence suggests that swine fever is not disseminated by external parasites. Persons, vehicles, and animals after contact with infected pigs or premises may carry infective material mechanically within the area of their movements, subject to the time limit indicated above; but the Committee conclude on the evidence that all wide dissemination of disease is due to the movement of infective pigs.

A pig may become infective three days after itself contracting infection and before exhibiting clinical symptoms of disease, and a pig which has contracted the disease may continue to be infective for a variable period, the extent of which is not yet fully ascertained, but which is often of considerable duration. Finally "there would appear to be" cases in which healthy pigs which have not visibly been affected by swine fever and show no post-mortem evidence of having been affected, are infective and remain so for a considerable time. The Committee are not very definite on this question of "carriers." Its investigation is very difficult; and the Committee's conclusion upon it is merely that "the possibility that the carrier pig exists cannot be lost sight of." Sir Stewart Stockman, in his individual report, speaks more strongly. He admits that the existence of carriers is not yet definitely established, but considers that circumstantial and experimental evidence taken together are "strongly in favour" of the view that they do exist.

Sir Stewart's experiments upon protective serum have yielded distinctly encouraging results. It appears that serum is highly effective in saving the lives of pigs which are exposed to infection immediately after serum is injected, if they are free from infection at the time of treatment. But it has no curative effect; its protective results are so far disappointing in the case of young sucking pigs; and the immunity it confers is brief. A prolonged immunity, however, can be obtained by allowing serum-treated pigs to come into contact with infection (natural vaccination) or by feeding or

inoculating them with virus (artificial vaccination). Serum and vaccination methods against swine fever are not perfect—the latter cannot at present be called free from risk—but their improvement is still being worked upon, and Sir Stewart's results are more hopeful than some of us expected.

The Committee enunciate a series of "general conclusions," of which two consecutive sentences deserve quotation. "The extirpation of the disease is practicable only by such drastic methods of slaughter as would involve a prohibitive outlay, and by such severe restrictions on movement as would be fatal to the industry of pig-keeping. Present circumstances, therefore, do not encourage the view that the extirpation of swine fever can be speedily accomplished or that such an objective should continue to be made the governing idea of administrative policy."

The Committee suggest that "new preventive methods may bring about a condition of affairs more favourable to the eradication of the disease."

Then they pass to a series of revolutionary recommendations.

In brief, the recommendations are as follows. The attempt to extirpate the disease by general slaughter should be abandoned for the present; and the immediate object of future policy should be to reduce its mortality and control its spread. To reduce mortality, the use of protective serum without avoidable delay in infected herds should be encouraged by every possible means, especially by facilitating the supply of serum. The production of immune herds by administering serum and virus simultaneously should be undertaken at the desire of owners, on selected premises, and under careful supervision and restrictions. Infected premises should be isolated; but the introduction to them of pigs to be treated immediately with serum should be permitted. The possibility of relaxing existing general restrictions on movement as the result of new measures should be carefully considered in the light of further experience. The lapse of a short period of time may be relied upon for disinfection of premises, and should be preferred to chemical disinfection for large quantities of manure, and for premises not readily capable of being disinfected artificially. After these recommendations, the Committee remark that they are "strongly impressed by the possibility" of artificial vaccination as a means of combating swine fever, point out the advantages which a reliable diagnostic test might yield, and recommend the continuance of the search for one; and this brings the report to an end.

Probably its publication will mark an epoch in the history of swine fever in this country. The Committee have endorsed that old dictum of Sir George Brown, "Nothing short of cattle plague regulations will stamp out swine fever," have decided such regulations to be economically impossible, and have been able for the first time to advise the substitution of a preventive treatment for stamping-out measures. We believe the two first decisions to be justified; the third can only be tested by experience.

TREATMENT OF NEMATODE DISEASES.

Perhaps Prof. Craig will not mind a few further remarks on this enormous subject. It is principally where he deals with tropical nematodes that I have any comment to make.

Thymol. He says: "Thymol . . . . might be useful, judging from results obtained in ankylostomiasis in the human subject."

In Vol. vi. of the *Journal of Tropical Veterinary Science* is an account of some experiments with thymol in pariah dogs in Lahore, on the same lines as Manson recommends for human beings. It was found that one set of doses, at least, had not any effect either in destroying or driving out ankylostomes, although tapeworms and ascaridæ were got rid of.

It is curious that many Indian pariahs harbour ankylostomes, often in large numbers, and do not seem much the worse.

Filaria in the circulation. In the paragraph headed "Nematodes of the Circulatory System," I feel that a wrong impression is conveyed as to filarial embryos causing "disease," when present in the general circulation. It is somewhat doubtful whether the *F. sanguinis equi* causes much harm to its host. I have seen many cases in India, and their discovery has in most cases been accidental. One pony had from four to six embryos in nearly every low-power field of the microscope, but showed no ill-effects. I did have one animal brought to me whose owner complained that he could never get the pony perfectly fit, and in his blood an occasional embryo could be found after a prolonged search, and only at intervals of a few days; but I finally concluded that other causes probably accounted for the want of fitness.

Argyle, in Vol. v, No. 1, *Jour. of Trop. Vet. Science*, describes horses affected with *F. sanguinis equi* and gives symptoms. He examined likely animals showing the symptoms described by Lingard in his pamphlet on "Filarial Embryos," and says: "In comparison with the number of animals examined the results are very small" and "the debility could generally be traced to other causes."

I think there is no doubt that horses, like human beings, in the tropics, can harbour filarial embryos in the general circulation, and yet appear perfectly healthy, and the same remark applies to camels (see Leese's article in Vol. vi, No. iv. *Jour. Trop. Vet. Science*). Prof. Craig is right, however, in remarking that "treatment is unsatisfactory," if by treatment he means trying to rid the circulation of the embryos. Experiments in India have failed to show that any drug so far tried, will remove permanently the *F. sanguinis equi* or the embryos of *F. evansi*.

Treatment of Summer Sores. Under "Nematodes in other situations," he says: "Summer sores in equines, caused by the *F. irritans* are best treated by complete excision of the granulations, and the application to the wound of strong antiseptics, such as 30% copper sulphate solution," and so on.

For summer sores as seen in India such treatment would be disastrous, and has been proved so

by experience. I cannot here go into the many forms of treatment tried in India with varying success, but it may be of interest to record that a single dose of atoxyl subcutaneously, *not* near the seat of the lesions, caused complete and early disappearance of the lesions in two cases. Excision of the lesions would be most heroic treatment—considering the fact that the lesions disappear by themselves at the end of each hot weather, as the name "summer sores" implies. "Prickly heat" in horses is one and the same disease. The lesions are often gigantic, and cover several square feet of the body surface. The cause is not, of course, the *F. irritans* itself, the adult worm being unknown. It is the larval form, constantly found in the lesions, to which the disease is attributed. Had Prof. Craig used, in connection with summer sores, the very words he uses for *F. hæmorrhagica*, they would have been singularly appropriate:—"If the affected areas are kept clean and undisturbed, the disease spontaneously disappears."

Treatment of Onchocerca. Prof. Craig says; "No satisfactory treatment is applied to the worm nodules caused by *Onchocera gibsoni*." But is any treatment required? The presence of the worm nodules is generally quite unsuspected till the carcase is opened, after slaughter for food. These worm nodules existed unnoticed in cattle in every Presidency in India, and also in Ceylon, until they were "discovered" in the year 1913, and would probably not have been seen then had not Dr. Sweet, from Melbourne, when on a visit to India, asked us to search especially for them.

It is *prevention*, from a meat inspection point of view, not *treatment*, that is aimed at.

Eggs in fæces—adults not found. Again he says: "In one case, in the horse, I have found eggs of strongyles in the fæces, and on post-mortem could find no worms in the alimentary canal." I have experienced this in sheep and cattle, not once, but over and over again, and have been puzzled by it. I don't say there were no worms at all, but often worms corresponding to all the varieties of eggs in the fæces were not found. I selected animals suffering from parasitic anæmia—known to natives as "gillar,"—and after repeated examinations of the fæces at intervals, and sketching every egg to be found, I would destroy the animal and compare the sketches with another series of sketches of eggs from the uterus of every species of worm found on p.m. In this way one soon readily recognises the egg of every worm commonly inhabiting the alimentary canal, and can spot any strangers at once.

I have often felt there is much need of an atlas showing all species of worms in all animals, and the appearance of their eggs as found in the fæces. Such an atlas would be a most useful guide to the practitioner in diagnosis.

Bacterial invasion. Mr. Norris "would like some specific instance of disease proved to be due to the co-operation of nematodes and bacteria." An excellent example is seen in the case of guinea-worms in dogs. Abscess formation is the rule, and death in dogs from pyæmia or septicæmia not uncommon. I think, however, that the theory as to general bacterial invasion from the alimentary canal being brought about by nematodes is usually somewhat exaggerated. The bacterial invasion seems to be purely a local one into the wall of the alimentary canal *in most cases*, and it is not until invasion takes place at innumerable points from large numbers of parasites, thus interfering with absorption, that the general bodily condition is affected. This is noticed particularly in sheep harbouring the *Stilesia globipunctata*. The invasion of the system by bacteria from the bowel, appears, *in most cases*, to be held in check by tissue reaction in the wall of the bowel, at the point where the nematode or parasite enabled the bacteria to penetrate, and the bacteria do not seem to gain further entrance into the system. For example, in the nodules caused by the young forms of *Æsophagostoma columbianum*, or, where immature *amphistomes* penetrate the bowel wall. In the latter case particularly I have often cut sections of the wall showing the amphistomes and bacteria in the wall tissue, but the bacteria penetrate no deeper than the parasites, and a wall of leucocytes is thrown out to protect the system. The same kind of thing is seen in the case of *Spiroptera megastoma* and *S. microstoma*, and on a larger scale. The bacterial invasion has resulted in a local tumor merely.

But there are some cases where bacterial invasion does take place, resulting in a general infection and death. I have had several cases of anthrax in horses, and have made careful post-mortems to show that infection undoubtedly took place from the large bowel, and where it did seem very highly probable that the spores of anthrax gained entrance from the lesions caused by the *Cylichostomum tetracanthum* which were present. Another, and an undoubted instance of parasites causing a general bacterial infection (although not nematode) is where the embryos of *Linguatula tænioides* leave the alimentary canal to invade the mesenteric glands, causing peritonitis. I have a specimen of mesenteric gland, from an instance of this in a buffalo, showing the suppurating orifice leading from the interior of the gland to the peritoneal surface. I believe Leese also attributed a case of peritonitis in a camel to this cause. I have some sections too of linguatula larvæ *in situ* in a mesenteric gland to which they have conveyed bacteria. They cause suppuration in the glands but apparently only very rarely, peritonitis.

Bursati—causation. I was very glad to find that Prof. Craig did not mention bursati as caused by filarial embryos. Perhaps he does not believe in the connection, or he would surely have touched on this point?

Lingard worked on this idea, but a careful perusal of his pamphlet will show how slender were his foundations. No one else appears to have seen his "felted aggregations of dead filarial embryos." I had the opportunity of examining some years ago a section of bursati tissue carefully preserved for many years by an A.V.C. officer in India, and regarded by some senior A.V.C. officers as absolute proof of Lingard's contentions. The "nest of em-

bryos" was probably a coil of elastic fibres, but they certainly were *not* filarial embryos.

Balfour, in the Soudan, a few years ago wrote an article in the *Journal of Tropical Medicine and Hygiene*, in which some astonishing statements were made about bursati and filarial embryos, and I wrote to him on the subject. In reply he told me he wrote the article merely to give rise to discussion, and I think I am right in saying that again there was no proof of any connection between disease and the embryo. The occurrence of filarial embryos and bursati in the same animal is a pure coincidence, and not surprising when one considers how common they both are.

The finding of filarial embryos locally in cases of bursati is probably due to a mistake in diagnosing a small "summer sore" as a bursati tumor.

If the meetings of the Veterinary Medical Association of Ireland often produce such an interesting paper and such a highly entertaining discussion, one can only wish they would meet more frequently!

Since the above note was sent for publication I have seen Mr. Evelyn Place's article in *The Veterinary Record* of September 11th. He says; "In 1898 the writer's investigations in India definitely fixed the blame for that form of cutaneous filariasis of the horse known as bursatee on members of the fly family."

Unfortunately for this statement we, in India, now know that bursati is *not* a form of cutaneous filariasis.

Possibly the infection of the membrana nictitans which Mr. Place saw was a "summer sore," it could not have been *true* bursati I imagine. If it was, it was a double infection.

Mr. Place incriminates musca and stomoxys, and in the same breath talks of the "absence of bursatee from fly-free areas." Does he serisusly mean us to believe that *any* part of India is free from the familiar house fly, and the almost as familiar stomoxys? I fancy his phrase "fly-free areas" is borrowed from a study of Tabanidæ and Trypanosomiasis, and his entire para. 2 leads me to conclude that at any rate as regards bursati he has been too much "working on the hypothesis laid down by the Arabs."

If the membrana nictitans affections in India, which Mr. Place dealt with, were not "summer sores (I hardly think they were), they were probably similar cases to those he describes in appendix B, which are common enough in India, except that in India we examine a scraping from such epitheliomatous growths *before* removal and find living filarial embryos, and after removal we section the growths and find them to be usually an epithelioma and sometimes a sarcoma. I cannot say that I ever regarded the filarial embryos as the cause of the neoplasms, but looked on them as a contamination.

In India filarial embryos are sometimes found in most unexpected situations. I once had a case in a horse which in some clinical respects resembled glanders. I tested with mallein and got no reaction; then examined an open discharging skin lesion and found filarial embryos in the discharge. A single dose of atoxyl caused the lesions to heal rapidly, and at the time I concluded the embryos were the *cause* of the trouble, though I had some doubts about it.

Bursati is a circumscribed new growth of varying size on the skin of equines, usually firmly attached to the underlying tissues, and with a hairless, weeping, red, eczematous-looking surface. On macroscopic section it is extremely hard and fibrous, containing small cavities a few centimetres in diameter in which is found the *characteristic* calcareous deposits known in India as kunkur. On microscopic section it is a pure fibroma. The kunkur appears to consist of amorphous salts of lime. The cause is of the nature of a streptothrix found in the tissues where the healthy skin is being invaded at the circumference of the tumor. Infection is probably caused by inoculation through an abraded surface. It can be cured by constant and careful treatment, by repeated application of silver nitrate stick to the circumference where skin and tumor join, and the application to the entire surface of Tr. iodine and zinc ointment alternately, roughly on alternate days, the iodine being to burn the surface and the zinc ointment to remove the dried scabs and give a new surface for the action of the iodine. When the growths are sufficiently reduced in size they may be removed surgically.

I give it as my firm opinion that bursati has no connection either with embryonic or adult filariæ or with flies.

S. H. Gaiger, I.C.V.D.

INTERDIGITAL ABSCESS IN THE DOG.

By George Yates, M.R.C.V.S., Harrow.

I was pleased to see some notes upon this interesting subject by my friend Mr. Ripley in your issue of August 28th, and, like him, believe the designation of eczema to this trouble is erroneous, since the swellings contain pus. Like him, I think the cause is local, and has its origin in the parts affected, and is not general or constitutional as sometimes supposed. It is true that it often occurs in gross and unhealthy dogs, and from my experience I cannot say that any particular breed is specially susceptible. The terrier breeds, including the Scottish terriers would appear to be so, but this is due to their general popularity. During the course of a year I have occasion to treat about one hundred cases: simple poulticing, lancing, etc., appear to be futile, since the abscesses again recur, whilst the application of iodine or caustics constitute cruelty. In country districts, upon incision of the abscess a piece of false barley or other grass is occasionally found, but in town, amongst the many cases encountered I have only come across one instance of this. Abscesses are more common in wet weather, on the wet London clayey soil, whilst the nature of the road surface (tarred, etc.), appears to have some influence.

Sometimes, upon excision, granules of melanin are found, and in most cases a fine membranous sac; whilst in more advanced cases a great deposit

of inflammatory or fibrous tissue, whilst the skin above is considerably thickened, and in long chronic cases a fistula is established.

Regarding the disease as of a localised character, I have not tried vaccine treatment, so can express no views upon this.

Infection taking place from the under surface of the pad, as Mr. Ripley suggests, may be probable, whilst wet, dirt, tar, or other substances gaining access to the interdigital space, matting the hair in this region, obliterating small orifices of sweat or sebaceous glands, producing a back pressure with subsequent suppuration, has appeared to me a more cause, in the same way that the anal gland, when its contents become inspissated prevent the escape of its secretion, and pus formation ensues. Reasoning so, and that extirpation of the whole abscess, fibrous tissue, etc., be carried out, the results have been most satisfactory, and many troublesome cases so treated have experienced no recurrence, except that other interdigital spaces in some have later required similar treatment. Many cases, of course, are entirely lost sight of, so it has been impossible to obtain any statistics, but notes made at the time of operation upon many others show no recurrence of the trouble in the same interdigital space.

General anæsthesia is not necessary. The application of a reliable local anæsthetic, like codrenine or sanspeine, give complete insensibility to the part. The hypodermic needle must be very fine for this—an all metal dental syringe with extremely fine interchangeable needles, to which the patient does not object; and inject in a few places around the region. After anæsthesia is complete a wide elliptical piece of skin is removed, together with fibrous tissue if present, exposing the parts underneath, and all trace of disease tissue is dissected out. An antiseptic dressing and bandage completes the work. The edges of the wound must not be allowed to unite too quickly, and must be pulled apart at each subsequent dressing. A very sharp scalpel is necessary, and a good pair of lock forceps to remove all traces of diseased structures, together with the fine membranous sac; for if this is not thorough, or is rendered incomplete by the patient struggling if the anæsthetic is not properly applied, their recurrence is inevitable. The syringe I refer to is called the Continental Dental Syringe, having metal cylinder, metal plunger, with impervious non-leak washer, and the needles used are the Aseptic Dental Hypodermic Steel Needles. These are very cheap, and a fresh one can be used for each case if desired. The syringe will force the anæsthetic into the hardest structures, and is most useful for any form of operation.

ABSTRACTS FROM FOREIGN JOURNALS.

Some Lesions of the Equine Respiratory Tract resembling Glanders.

In horses, it is not rare to find lesions which more or less distinctly resemble those of glanders. Joest records some of these cases (*Zeitschr. f. Infectionskr. u.s.w.* 1915). Two were cases of tuberculosis of the pituitary mucous membrane, one was an amyloidosis of the nasal cavity, one was a hæmorrhagic lesion of the pituitary mucous membrane due to purpura hæmorrhagica, and the fifth was a case of marasmic ulcerations of the larynx.

In the two cases of tuberculosis of the pituitary membrane, the lesions bore an evident resemblance to those of glanders. In one case there were numerous hemispherical elevated whitish-grey nodules of various sizes up to that of a linseed upon the left side. Around these nodules were irregular ulcers which reached up to the size of a centime, with elevated edges. On the right side the ulcers were larger and more irregular, and their edges were more elevated. Upon the anterior part of the mucous membrane the lesions were less serious; in the cranial portion, in the neighbourhood of the the nodules upon the left side, there was an oval opening about the size of a five-centime piece, limited by a greyish thickened tissue.

Histological examination revealed many giant cells, epitheloid cells, and leucocytary elements. There were also young connective tissue cells irregularly disposed. The larger nodules showed some signs of degeneration. The ulcers, which were necrotic at the base, had undoubtedly developed by the discharge of necrosed masses from the nodules. The lesions contained tubercle bacilli. Lesions of miliary tuberculosis were also found in the lung.

The second case was a horse which had been killed because it was suspected of glanders. The lesions were less serious than in the first case. The surface of the pituitary mucous membrane was rendered unequal by cicatrices, among which ulcers were also found. The general colour of all the diseased parts was greyish, and the tissue was remarkedly firm in consistence. The nasal cartilages were normal.

Histological examination revealed tuberculosis, which was also confirmed by the presence of tubercle bacilli. Tuberculous lesions were also found in the liver and spleen.

Joest, in discussing the differences between tuberculous and glanderous lesions in horses, points out one difference in the appearance in the large cicatrices of the nasal septum which are seen in both diseases. Those of tuberculosis are irregularly disposed, while those of glanders have a fine and radiated or stellate structure. Moreover, verrucose growths are not seen in glanders. In other respects, the cicatrices of glanders and tuberculosis do present a certain similarity.

Various authors (Rabe, Grawitz, Piana, and Stazzi), have noted that amyloid degeneration of the nasal cavities may often present lesions suggesting those of glanders. The case Joest now records was seen in a mare. The left nasal cavity contained a small nodule which, when histologically examined, showed a thickening which involved the mucous membrane proper, the submucous tissue, and the papillary bodies. The mucous membrane and submucous tissue contained strips of connective tissue much enlarged and united into a homogeneous mass, which gave the peculiar staining reactions of amyloidosis. It is true, however, that in such cases as this there is not much likelihood

of the lesions being confused with those of glanders. Among the chief points of differential diagnosis mentioned by Joest are (1) that amyloid nodules never present ulcerations similar to those which are common in glanders, and (2) that in amyloidosis there is less tendency for the lymphatics of the region to become involved than in glanders.

In some infections of the horse there are ecchymoses or hæmatic nodules of the nasal cavity which may suggest glanders. In animals hyperimmunised against anthrax (horses which are used to produce anti-anthrax serum) punctiform hæmorrhages or hæmorrhagic spots of the nasal mucous membrane are often seen, nearly always without any lesions of the conjunctiva and skin. Most frequently resolution takes place in a few days. It is certain that in purpura hæmorrhagica similar lesions have been observed in the initial stage of the disease; and Joest has seen one atypical case of purpura hæmorrhagica which suggested glanders.

Joest's fifth case showed peculiar post-mortem lesions of the larynx. Each of the two sides of the arytenoid cartilage had an ulceration on its inner aspect in the vicinity of the dorsal margin. The right ulcer was the size of a pea, and the left one that of a bean. They were oval in shape, smooth-edged, and partly covered by a greyish mass of tissue. These lesions, however, did not show the specific characters of glanders lesions, *viz.*, thickness and corrosion of the edges of the ulcers; and the other lesions which generally affect the mucous membranes in glanders were absent.

The horse in question had been ill for three months; and tracheotomy was performed upon him. Double pneumonia, however, developed; and afterwards the animal died in a condition of very severe marasmus. Marasmic ulceration of the larynx, in the form above described, is unusual in animals.—(*La Clinica Veterinaria*).

Effects of Ordinary Salt and Rock Salt on Fattening Cattle and Sheep.

These trials have been made at Cockle Park, the Northumberland County Agricultural Experiment Station, and include trials with fattening cattle and with fattening sheep.

1. Trial with fattening cattle 18-24 months old; winter of 1914-1915.

Twenty-four cattle just over eighteen months old in November, 1914, were used in this trial. They were all bred at Cockle Park, twenty-two of them being blue greys from a white shorthorn bull and Galloway cows, while two were from a white shorthorn bull and Aberdeen Angus cows. They were divided into eight lots, three beasts in each lot. Lots A, B, C, and D were bullocks and were fed in boxes, there being one box for each lot. Lots E, F, G, and H were heifers and were fed in stalls. The trial began on November 19th and ended on March 11th. The main objects of the trial were to test the feeding of the cattle:—

a. Without salt.
b. With free access to lumps of rock salt.
c. With one ounce of salt added to the food daily.

The feeding rations. The daily rations fed per 1000 lb. live weight were as follows:—

Foods.	High swede ration. Lots C, D, G, H.	Low swede ration. Lots A, B, E, F.
Swedes	84 lb.	28 lb.
Meadow hay	14 lb.	21 lb.
Soya cake	3½ lb.	2 lb.
Bombay cotton cake	2¾ lb.	4 lb.
Bran	2 lb.	3½ lb.

As the average weight of the bullocks at the beginning of the trial was about 7¾ cwt. live weight, and of the heifers 6½ cwt., the daily rations fed were considerably lower than the foregoing in the earlier months of the trial. Towards the end the bullocks were receiving more that the foregoing, as their average live weight was greater than 1000 lb., but the heifers did not reach 1000 lb. live weight at the end of the trial.

Results. The results show that the bullocks which received no salt gained on the average 17 lb. weekly in live weight, while the bullocks which had access to rock salt in the feeding troughs gained 16⅝ lb. weekly. The heifers which received no salt gained on the average 12¾ lb. weekly, while those with one ounce of salt daily mixed with their concentrated food gained 13 lb. weekly. These results show that the salt had practically no effect, either with the bullocks which had access to rock salt, or with the heifers to which one ounce of salt was fed daily.

Salt in swedes. The bullocks receiving the heavy root ration did rather better when they had access to rock salt, but not so when they were receiving the light ration of roots; and the same results were noted with the heifers.

Mr. S. H. Collins, College Advisor in Agricultural Chemistry, found that the swedes fed to the cattle, and sampled on January 26th, contained 10.64 per cent. of dry matter, including .02 per cent. of salt. The cattle therefore, consuming 84 lb. swedes daily would receive about about ¼ oz. salt daily in the swedes they ate, whereas those consuming 28 lb. daily would receive about 1/12th ounce of salt in the swedes.

High and low swede rations. From the results it was found that the bullocks receiving 84 lb. swedes daily gained on the average 18¼ lb. live weight weekly, while those receiving 28 lb. swedes daily made live weight gains of 15⅝ lb. weekly. On the other hand the heifers receiving the high swede ration gained 11⅞ lb. weekly, whereas those receiving the low swede ration gained 13⅞ lb. weekly. On the average, therefore, practically the same feeding results were obtained from the high and the low swede rations, thus confirming former results at Cockle Park—that substitutes for a large amount of swedes can be used that will give equivalent results, consisting of concentrated foods and fodder, *provided they contain the same nutrients.*

2. Trial with fattening sheep in sheephouse, winter, 1914-1915.

The sheep used in this trial were 48 half-bred hoggs, which had been bred at Cockle Park in season 1914. Three lots of 16 in each lot were fed in the sheephouse. Each of the lots were in four pens, four hoggs in each, two of the pens being to the east and two to the west. A preliminary period of a fortnight preceded the trial. The hoggs were valued at 33/6 a head on November 7th, and as they realised 5⅝d. per lb. live weight when sold, their value when the trial ended was just over 57[- per head.

Daily feeding ration. The daily raition per 100 lb. live weight (practically per head) was:—

Turnips	10.7 lb.	Soya cake	.4 lb.
Meadow hay	1.2 lb.	Bombay cotton cake	.4 lb.

Lot 1 received no salt, Lot 2 had access to rock salt, and Lot 3 had ¼ oz. common salt daily in the concentrated food.

Results. The results show that the sheep in Lot 1, receiving no salt, gained on the average 1.87 lb. in live weight weekly; those in Lot 2, with access to rock salt, 1.67 lb; and those in Lot 3, with ½ oz. common salt fed daily with concentrated food, 1.76 lb. Salt, therefore, either in the form of rock salt or as common salt fed with the concentrated food, has not been an advantage, but rather the reverse.

Summary of results. These trials were made because it has not been the practice at Cockle Park to use salt for fattening cattle, store cattle, or sheep, either indoors or on pasture. The object of the trials was to ascertain whether the live stock should have access to rock salt, or should have ordinary salt mixed with their food.

The foregoing trials clearly indicate that salt is not required for fattening cattle or sheep fed indoors at Cockle Park. It looks as if the foods fed to the live stock at Cockle Park contain a sufficient amount of salt, and that, therefore, the addition of salt is not required.

In the foregoing trials the prices of the foods were taken as follows:—

Swedes	per ton	£	10	0
Meadow hay		2	10	0
Oat straw		1	15	0
Soya cake		8	15	0
Bombay cotton cake		6	2	6
Bran		6	5	0

Cockle Park is about six miles from the east coast, but the prevailing winds are from the south west.

DOUGLAS A. GILCHRIST,
Director on behalf of Armstrong College.

The Sudan Veterinary Service.

Of the several Sudan Government administrative branches none has been organised or conducted with greater care, nor, it may be added, met with a greater amount of success than that of the Veterinary Department. There has been cattle plague in the Sudan at all times—both before the British Occupation and afterwards—and it may be assumed that, notwithstanding all the care and prevision of the authorities, it always will exist to some extent. Within recent weeks the disorder has again broken out in the Nuba mountain Province, especially in the Eliri and Talodi districts, where as many as 5060 different inoculations have been made at one visit by the surgeons. This particular form of the malady is known locally as the "Abu Gineit" disease, and it is sufficiently serious to engage the closest amount of attention upon the part of the authorities. Not the least of their difficulties in dealing with it is the fractious opposition shown by the native cattle-owners to their interference. Instead of welcoming the assistance offered, and which is rendered almost free of expense to them, the ignorant Arabs believe that the surgeons instil, instead of exterminate, the complaint, and nothing convinces them to the contrary. Even if a cure be effected, the ungrateful proprietor of the sick beast or beasts declares that it was "Kismet"; while if by chance the animal or animals should die, then it is the English devil-doctors who have killed them. The average Arab, indeed, often recalls the witty saying of Disraeli, who once declared that "Mr. Kremlin himself was distinguished for ignorance, for he had only one idea, and that was wrong."

The Sudan Government Veterinary Department entails an annual outlay of something over £E27,000, while, as the receipts fall short of £E10,500, it will be recognised that the branch is carried on at a substantial loss. Nevertheless, it is one of the first importance, and could not be abandoned or even reduced in regard to its complement were the loss entailed to amount to double. The receipts earned are in the form of quarantine fees, which usually account for the greater part of the revenue, viz., between £E8500 and £E10,000 forming the total receipts of £E10,500. The remaining payments include inspection fees (in 1913 these actually amounted to about £E1250), charges for loading and unloading animals, and other small demands.

On the other hand, the department maintains a very considerable staff of competent and experienced veterinary surgeons, in addition to one director, whose annual "allowance" is £E450. The department is divided up into six sections: the veterinary, the quarantine, the veterinary survey, the breeding, the accounts, and the stores. Each of these sections has an assistant director or inspector, who is assisted by either a British or an Egyptian officer. The highest regular salary paid in this department is one of £E840, received by the two assistant directors of the veterinary and quarantine sections, while the lowest is one of £E150, received by the storekeeper, who usually is a British non-commissioned officer. Naturally the number of officials allotted to each province varies with the particular size of the province and the number of cattle to be found there. Thus Kordofan has the services of two veterinary inspectors, while all the rest have but one. Latterly there has been an increase in the cost of almost all the supplies and equipments of the department, due to the rise in the prices of practically everything required. For instance, the amount allocated in 1913 for forage stood at £E570, while for 1914 it had increased to as much as £E1000; travelling allowances advanced over the same period from £E700 to £E925, drugs from £E150 to £E200, grooms' allowance £E180 to £E256, and climate allowance from £E200 to £E260. The economies effected included a reduction in the purchase of serum from £E2160 to £E1698; extra pay for medical and veterinary officers for inspection of meat, cattle, etc., from £E400 to £E94; and special expenditure in connection with cattle plague from £E540 to £E400.

At the time of the second British Occupation the Sudan was found to be reeking with disease, both among cattle and human beings. By the end of 1906, however, an immense improvement had manifested itself in both, and particularly among the dumb brutes. Colonel Griffith, writing on the subject, declared that "at the present time cattle plague seems to be nearly eradicated from the Sudan." As has already been pointed out, however, the country can never be considered as free from danger of infection, as the disease is enzootic in Erythræa and Abyssinia. The only means of stopping infection is by having strict cattle plague supervision on the frontier. However vigilant this may be, it is practically impossible to detect cattle being passed at night across the border, especially in dense, bushy country; while an additional danger arises from infection through game and other wild animals. The posts established by the Government, and served by both mounted and unmounted police, for the purpose of watching what goes on, undoubtedly have proved useful if—for the reasons explained—only partially successful.

Unquestionably the most effective step taken by the Administration was that in 1913, when there was established a clearer division of duties of the officials, then only made possible by an addition to the staff of six inspectors, while the service at the same time was subdivided into the four main channels: general veterinary, veterinary survey, quarantine, and breeding—already referred to. Now each section inspector is made responsible for the interests with which his particular section is identified. The six additional inspectors who joined the Government service were Capts. E. C. Webb (serum expert), who is established at Cairo; J. R. Bosley, at Gedaref, in the Province of Kassala; L. Danels, at Merowë, in the Dongola Province; A. C. Anderson, at Halfa, in the Halfa Province; F. Roche Kelly, at Wad

Medani, in the Province of the Blue Nile; and W. F. L. Bright, who is stationed at Shendi, in the Berber Province. The Director of the whole Veterinary Department is Major F. U. Carr, who has been in the Government service since September of 1908. The assistant director is Capt. G. P. Knott, who boasts but one year's service less to his credit, having joined in January of 1909. Five of the staff are stationed at Khartoum, and altogether the department has the advantage of seventeen British officers, several British non-commissioned officers, and two Egyptian officers, seconded from the Veterinary Department of the Egyptian Army, and who are now employed in the Red Sea Province.

The department was framed—as have been so many others of the Sudan Administration—with great vigilance for the future requirements of the fast-growing country. Thus, in regard to organisation, it was from the first looked upon as imperative that, as funds were forthcoming, a foundation in the shape of a British staff should first be established; this having been accomplished, there came the super-structure, a staff to satisfy requirements, selected and trained from among the inhabitants of the country. The object aimed at has been achieved with great trouble and much success: the progress hoped for has been attained to an altogether remarkable degree, and the excellent work undertaken and pursued—not unseldom in the face of the most tiresome and discouraging conditions—goes steadily forward.—*The Near East.*

OBITUARY.

MARCUS J. STEVENSON, Capt. A.V.C. (T.F.)
Graduated, Glas.: Dec., 1888.

News has been received of the death of Capt. Stevenson on Sept. 10th, at Abbaseyeh, Egypt. He had an extensive practice at Finchley, London, N., and joined for active service soon after the commencement of the war. His age was 49 years.

DUTIES OF THE A.V.C.

Dear Sir,—With reference to the enquiries of "Curiosity" in your issue of Sept. 4th, "Curiosity" will do well to write to the War Office direct before accepting the statement of "W. H. B." in your last issue, that "the Authorities ask primarily for professional ability," when he will find that this is not correct, and that professional experience is quite secondary, as is also previous experience on active service.

"Curiosity" is right in stating that information (of the right sort) is keeping many members from going to do their best.—Yours truly.

"BETA."

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 9.

REGULAR FORCES. ARMY VETERINARY CORPS.

C. Budd to be temp. Quartermaster with hon. rank of Lieut. Dated Sept. 10.

Sept. 11.

To be temp. Lieuts.:—
J. F. Donnelly. Dated Aug. 3.
W. H. Tummonds. Dated Aug. 8.

Sept. 14.

Temp. Lieut. A. S. Leese to be temp. Capt. Dated Sept. 15.

To be temp. Lieut.:—R. G. Gray. Dated Aug. 17.

Sept. 15.

Temp. Lieut. F. B. Barling relinquishes his commission on termination of engagement. Dated Sept. 11.

To be temp. Lieut:—G. H. Broad. Dated Sept. 1.

Sept. 16.

To be temp. Lieut:—W. B. Cronyn. Dated Sept. 1.

Sept. 9.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Capt. R. Finch, N. Zealand Army, Vety. Dept., to be Captain (temp.). Dated Sept. 10.

Sept. 14.

Captains to be temp. Majors:—
J. Abson, F.R.C.V.S. Dated Aug. 6.
J. A. Connell. Dated Aug. 17.
R. G. Anderson. Dated Aug. 25.

Lieut. J. A. Dixon to be Capt. Dated Sept. 15.

The A.V.C. Comforts Fund.

Dear Sir,—I have pleasure in again forwarding lists of subscriptions received and kind contributions sent for the Army Veterinary Corps Comforts Fund. Also I enclose copies of some letters which will show how the comforts are appreciated.

Owing to my impending change of residence at the end of this month, I am asking all contributors to kindly delay sending parcels until after October 1st. I shall then be delighted to receive all gifts sent for the Comforts Fund.

May I again remind those who have books, magazines, papers, games, etc., to spare, how appreciated they will be in the men's reading rooms and canteens. If sent to me I will forward at once.—Yours truly,

ADELAIDE M. MOORE.

Further Subscriptions received from:—

Mrs. Shelton Jones (proceeds entertainment)	£2	2	0
Dr. S. Brenton (Detroit Vety. Sanatorium)	1	0	0
Lieut.-Col. F. C. Stratton	5	0	0
Mrs. Helena Harvey (proceeds Garden Fête)	4	0	0

Parcels received from:—

Mrs. Garnett, Mrs. Bolton, Mrs. Rutherford (9th and 10th contribution), Mrs. Scott (Leyton), Mrs. Burke Savage: also 20 beautiful cardigan jackets as forwarded to me by order of Mr. J. Smith, J.P., Vety. Department, Livingstone, Northern Rhodesia.

From the Matron, Red Cross Hospital, No. 7 Veterinary Camp:—

"I am writing to thank you for the splendid lot of comforts you so kindly have sent us. I have only now had time to stock my linen cupboard with the excellent supplies you sent. I wish you could see how comfy and cosy the laddies are in the warm bed jackets, and how up-to-date in their blue suits and red ties. The beautiful woolly blankets I wrapped round my poor little fractured skull patient, and they certainly helped his recovery during his collapsed condition. The socks I always require, and the underclothing is also most welcome."

From O.C. No. 16 Vety. Hospital, Advanced Base. Gallipoli Peninsula:—

"Very many thanks indeed to you and the many kind contributors to the A.V.C. Comforts Fund for the splendid gifts of socks, cardigans, stationery, cigarettes, etc., which were received on Saturday last. We managed to distribute suitable gifts to each N.C.O. and man according to their individual wishes, and I enclose letters from a sergeant, corporal and private. You will see how thoroughly they appreciate the kindness in thinking of them in this far away 'Colony.'"

The private writes :—

"I have to thank you on behalf of the men of the 16th Vety. Hospital, in the Mediterranean, for the gifts received on the 28th Aug. I must say that all the men of the section are highly delighted with the gifts, which were very acceptable and appropriate. I can assure you we all appreciate the efforts of the veterinary officers and members of the profession and their families in making such a fund possible. We are all very grateful for your kindness."

I may add, I have since despatched two large consignments for our men in the Gallipoli Advanced Base. I am sure they deserve all the comforts and cheer we can send them to brighten their trying experiences in those inhospitable regions.

An experience in the torpedoed Hesperian.

Mr. Henry G. Bowes, F.R.C.V.S., of Leeds, with his wife and child, were among the passengers of the torpedoed liner Hesperian.

For the past eleven months Mr. Bowes has been touring Canada and the States with the British Remount Commission, and he returned to England about a month ago on a few weeks' leave of absence.

In an interview, Mr. Bowes said, "After dinner on Saturday evening Mrs. Bowes and myself were on the deck, having put the child—a little girl of three—to bed. We were just congratulating ourselves that we were practically out of the danger zone, when a terrific explosion occurred, followed by an avalanche of water over the ship. We were, of course, drenched through to the skin. I knew what had happened. We rushed down into the cabin for the little girl, who was asleep in her bed. I put her a lifebelt on, and having provided my wife and myself with lifebelts, we went on deck again.

By that time we found a boat there nearly full of passengers, and ready for lowering. I put my wife and child into it. In that boat before it was picked up there were some sixty persons. My wife did not like the idea of going without me, but at that time there were other women still to be got off the liner, so, knowing that I was well equipped with a lifebelt, and that the Hesperian would not sink for some considerable time, I had made up my mind, in the event of there not being a boat available, to take to the water, and chance being picked up.

Fortunately, in the meantime, the officers were bringboats which had been standing by, and which were not full, back to the liner, so I climbed down into one of these. After about a couple of hours had elapsed we were picked up by a steamer. I can tell you I was very thankful when I got on the steamer, and found my wife and child there.

There were some exciting moments as the boats were being lowered. Owing to the darkness some difficulty was experienced, and in the hurry some of the boats not lowered horizontally, with the result that some of the passengers were precipitated into the sea, and in two instances boats were swamped by getting into the outflow from the condensers. The sea was beautifully calm—on the previous night it was just as rough. The behaviour of the passengers generally was admirable, especially the women."

Mr. Bowes paid a high tribute to the First Officer (Mr. Richardson), who was responsible for getting several boat-loads of passengers from the doomed ship.

The method by which the life-belts are brought into use on the big liners was the subject of strong criticism by Mr. Bowes. "There is nothing done to destroy the air of ridicule as to the wearing of life-belts. The proper thing would be to insist that all passengers should have a life-belt when they are passing through the danger zone. As it is, the life-belts are in the cabins, and in the rush there is no getting to them. We had the greatest difficulty to get ours. I think it is absolutely essential that they should encourage people to take life-belts about with them when within the range of hostile submarines. It's no good saying there's one in the cabin when the boat is going down."—*Yorkshire Evening Post.*

Accident to a Motor.—Action by V.S.

In Kirkcudbright Sheriff Court on Sept. 3, the record was closed in an action at the instance of Mr. John Baird, M.R.C.V.S., 35 Castle Street, Dumfries, against (1) Messrs. W. T. Henley's Telegraph Works Company, Ltd., 59 Waterloo Street, Glasgow; (2) the Provost, Magistrates, and Town Council of the burgh of Maxwelltown as road authority of said burgh; and (3) the Right Hon. Robert Munro, K.C., M.P., his Majesty's Advocate, representing the Post Office. Pursuer claims from the defenders jointly and severally, or severally, the sum of £41 7s. 3d., in respect of an accident to his motor car. He states that on the afternoon of 23rd December, 1914, while motoring towards Dumfries, he was precipitated into a hole in Galloway Street, Maxwelltown, which had been excavated by the first-named defenders on behalf of the Post Office. The hole was not protected, nor was there any person or light there to warn the travelling public of its existence. The car was badly damaged, and he claims: For hire of car while it was being repaired, £17 4s. 9d.; repair of car, £4 2s. 6d.; for depreciation of car, £20.

Messrs. Henley deny that the hole was excavated with their consent or under their supervision. The damage sustained by the car, if any, they say, was trifling.

Maxwelltown Town Council explain that the hole was covered by a tent about five feet high. It is also explained that the obligation to place lights at any excavation in the street of a burgh rests upon the person making it; not on the Town Council. It is explained that the Postmaster-General intimated to the Town Council his intention to lay underground telegraph in the burgh and to make good any damage. The excavation was not made on behalf of the Town Council.

The Lord Advocate explains that the hole was made by the first-named defenders in the performance of a contract which they were executing for the Post Office. It is believed that the pursuer's car was slightly damaged, and that the sum claimed in name of damages is excessive. The Crown and its departments of State are not liable for the faults or negligence of their officers, or for Messrs. Henley or their servants, and there is no jurisdiction either by common law or by statute against the Crown or any of its departments.—*Dumfries and Galloway Saturday Standard.*

Parasitic Mange among Horses.

The following circular has been issued to local authorities in Great Britain under the Diseases of Animals Acts, 1894 to 1914, by the Board of Agriculture, under date September 1st :—

Sir,—I am directed by the President of the Board of Agriculture and Fisheries to acquaint you, for the information of your local authority, that his attention has been drawn to certain cases of parasitic mange found among horses which had a short time previously been cast from the Army, and to the risk of the spread of the disease to other horses with which they were brought into contact.

Lord Selborne has been in communication on this subject with the Army Council, who have suggested that with a view of co-ordinating the efforts being made to control and eradicate the disease, local authorities

might be asked to arrange that information as to cases of the disease found amongst cast Army horses should be at once reported direct to the General Officer commanding the command concerned in order that prompt investigation may be made, and steps taken to prevent further sale of any affected animals which may be discovered as the result of such investigation.

Lord Selborne desires me to request that your local authority will be so good as to make the arrangements suggested by the Army Council, and that such arrangements should apply not only to cases of parasitic mange, but also to the other equine diseases scheduled under the Diseases of Animals Acts, namely, glanders (including farcy), and epizootic lymphangitis.

The various commands and the area covered by each are shown in the monthly Army List.—I am, sir, your obedient servant,

SYDNEY OLIVIER, Secretary.

Losses through suspected Anthrax.

At a recent meeting of the Perthshire Local Authority under the Diseases of Animals Acts, held in Perth—Mr. W. Henderson, of Lawton, the Chairman, presiding—the Clerk (Mr. David Marshall) reported that Mr. W. M. Ferguson had accepted the appointment as veterinary inspector for the East Carse district.

The Clerk submitted the report of outbreaks of disease for the half year. There were 29 cases of anthrax reported, of which the veterinary inspectors diagnosed 23 as not anthrax. In the remaining six cases the inspectors suspected anthrax, but only in four of these cases was the disease confirmed by the Board of Agriculture.

The Chairman said that was an extraordinary state of matters. What was a farmer to do? He had a beast that died. He reported the case as anthrax, but there was no anthrax about it. Three cases happened in his district recently. The four cases confirmed were all in one park, and took place between 12th and 22nd June. It was important for farmers that the facts and history of these cases should be known. This year those 29 cattle might be worth anything up to £30 or £40 each.

It was agreed to try and ascertain the history of the four cattle affected, and the history of the field, especially in regard to manuring. It was mentioned that the farmer entered at Martinmas last, but that the previous tenant was still in the district.

The Chairman pointed out that while the Board of Agriculture accepted as final the report of the local inspector in cases where the diagnosis was negative, they did not do so in cases of positive diagnosis. The risk that the farmer ran was a very serious one, and he wanted to know whether any previous cases were reported or suspected at that place. In ten days this year he lost £100 worth of cattle, and they were not in the same field.

When the veterinary inspectors say it is not anthrax nothing more is done. Here the loss was tremendous—only four out of 29 cases were confirmed—if they took it at only £20 apiece, and a lot of them were worth far more. It was a very serious matter to see probably £600 worth of animals lost for four cases confirmed of anthrax. There ought to be a quicker way of handling them. He thought they ought to write to the Board pointing out the serious loss to farmers, especially in present circumstances.—*The Scottish Farmer.*

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks (a)	Animals.	Outbreaks (a)	Animals.	Outbreaks (b)	Animals.	Outbreaks (b)	Animals.	(b)	Outbreaks (a)	Slaughtered. *
GT. BRITAIN. Week ended September 11	9	10					11	30		39	97
Corresponding week in 1914 ...	13	14	2	6	3	8	4	4		78	732
Corresponding week in 1913 ...	3	4			1	1	19	38		30	268
Corresponding week in 1912 ...	7	8	2	62	8	11	16	18	1	43	840
Total for 37 weeks, 1915	433	494			36	65	‡604	‡1310	161	3093	13703
Corresponding period in 1914 ...	538	588	22	108	78	231	1526	2638	155	2960	30000
Corresponding period in 1913 ...	390	430			118	295	1959	3933	132	1790	23834
Corresponding period in 1912 ...	583	662	77	563	134	247	2381	5139	175	2290	30080
IRELAND. Week ended Sept. 11	...	...	...	...	...	...	Outbreaks 2	10	5	27	
Corresponding Week in 1914 ...	...	...	...	...	...	...	1	5	1	11	
Corresponding Week in 1913 ...	...	...	...	...	...	...	1	7	...	4	
Corresponding Week in 1912 ...	...	...	...	...	...	...	...	1	1	6	
Total for 37 weeks, 1915 ...	1	1	...	...	1	3	56	306	186	1032	
Corresponding period in 1914 ...	1	1	76	957	...	...	65	397	160	836	
Corresponding period in 1913 ...	...	...	...	...	...	...	102	383	113	693	
Corresponding period in 1912 ...	3	3	27	260	...	...	53	264	180	1499	

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked: Board of Agriculture and Fisheries, September 14, 1915. ‡ Figures for twenty-four weeks only.

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 13, 1915

NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.